

# AUDIT

## A physiotherapy specialist clinic in paediatric orthopaedics: is it effective?

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A physiotherapy specialist clinic was set up to reduce waiting times for non-urgent, new paediatric orthopaedic referrals. The outcome was reviewed at a minimum of 12 months for 1046 referrals assessed in the physiotherapy support clinic to analyse its effectiveness.

Altogether 114 patients failed to attend the clinic. The remaining 932 patients form the basis of this study. Ninety three percent of these patients were managed without direct consultant intervention—72% with advice and reassurance, 17% by referral to the physiotherapy department, and 4% with surgical appliances. Only 7% needed consultant evaluation. Median waiting time for non-urgent conditions was reduced from 72 weeks in May 1996 to five weeks in May 1999. A majority of the parents were satisfied with the clinic. The clinic was found to be cost effective.

The success of the clinic was attributable to good cooperation between the consultant and physiotherapist and a well defined protocol for assessment and management of patients.

Paediatric orthopaedics is now a well established subspecialty of orthopaedic surgery and several such specialised units have been set up in the UK. There has been a sustained and rapid growth in the demand for hospital (including paediatric orthopaedic) services.<sup>1</sup> Waiting times for new patient appointments can be considerable. An audit of general practitioner (GP) paediatric orthopaedic referrals to the Coventry and Warwickshire Hospital (1996) revealed that the median waiting time was 72 weeks for non-urgent simple conditions and 17 weeks for more urgent, complex cases. Health authorities are under governmental pressure to reduce the number of patients on waiting lists while keeping costs to a minimum. *The Patient's Charter* recommends that all new referrals must be seen within 26 weeks and 90% within 13 weeks.<sup>2</sup> How can this be achieved?

Previous studies of outpatient caseload in orthopaedics have suggested that a proportion of orthopaedic outpatient referrals could be managed efficiently and effectively with consultant support but without direct consultant intervention.<sup>3-5</sup> A similar study of referrals to a paediatric orthopaedic clinic suggested that over half the children seen were normal or had benign conditions that required nothing other than reassurance.<sup>6</sup> Physiotherapists with extended training have successfully managed selected orthopaedic referrals in general orthopaedic and low back pain clinics.<sup>7-9</sup>

On the basis of these considerations, to reduce waiting times and costs, we set up a specialist clinic managed by an experienced physiotherapist in May 1996 for non-urgent GP paediatric orthopaedic referrals for conditions whose management was by and large non-surgical. The aim of this retrospective study was to review the outcome at a minimum of 12 months (to allow time for onward referral, follow up appointment, or repeat referral to the hospital) of 1046 consecutive referrals assessed in the physiotherapy specialist clinic and to analyse the effectiveness of the clinic.

### PATIENTS AND METHODS

Letters from GPs were assessed by the consultant paediatric orthopaedic surgeon as to the suitability for attendance at the physiotherapy specialist clinic. Patients with minor conditions that could be managed by either reassurance alone or by

conservative means, at least initially, were thought to be suitable for attendance at this clinic. Cases that were regarded as not suitable to be seen by the physiotherapist were (a) referrals from other consultants, (b) those who appeared to have a condition that may need surgery, (c) those with known or suspected neuromuscular disorders, (d) those with symptoms suggestive of infective, inflammatory, or malignant disease, (e) those who have had previous surgery, (f) those who had already failed to benefit from conservative measures, and (g) those with multiple problems. The patient's consent and the GP's approval for the initial assessment by the physiotherapist were secured.

### Training

The physiotherapist had been previously attached to the paediatric orthopaedic unit for several months and had been involved in the preoperative assessment of all cases and their non-surgical and postoperative management. Before the start of this study the physiotherapist developed standard protocols for taking the patient's history, clinical examination, ordering investigations, and offering appropriate advice with guidance from the consultant. Assessment protocols for the following broad patient categories were developed—gait abnormalities, anterior knee pain, overuse disorders, and foot problems.

### Outpatient assessment

The physiotherapist used a standard protocol including history, clinical examination, and documentation. A provisional diagnosis was made and the problem was then fully discussed with the patient and relatives and appropriate advice and treatment prescribed. Approximately 30 minutes were allowed for this evaluation. After a clinic, letters were written to the patients' GPs and the physiotherapist filled in a structured record form for each patient. The information was stored in a computer database. Data collected included patient details, date of referral from the GP, date seen, diagnosis, advice or treatment given.

The physiotherapy clinic differed from the consultant's clinic in that only four to eight patients were assessed in a clinic, allowing plenty of time to identify patients' problems, respond to patients' concerns about their health, and advise

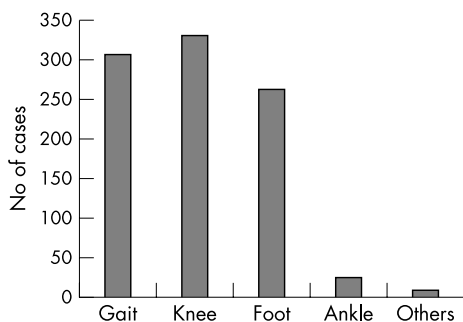
them about management of their condition, including exercise regimens where appropriate. These clinics were held concurrently with the consultant clinics. This made access to a second opinion a simple matter. Patients who did not respond to conservative measures and who needed surgery were referred to the consultant.

The effectiveness of the clinic was assessed using the following measures:

- (A) Reduction in the waiting time for non-urgent simple conditions was calculated from the clinic database.
- (B) Reduction in the waiting time for urgent and complex cases seen in the consultant clinic was calculated using data from the trauma and orthopaedic directorate office.
- (C) Patient satisfaction was measured using a multidimensional questionnaire survey from a random sample of 100 patients (and parents) seen in the clinic. Issues addressed included facilities available in the clinic both for parents and children, access to the clinic, awareness to the fact that they were being seen by a physiotherapist, time spent with the patient, patient involvement in decision making, communication between the patient and the physiotherapist, humaneness, outcome, and overall quality.
- (D) Number of re-referrals to the clinic from the GPs.
- (E) Cost effective analysis was carried out comparing the costs per patient managed in the physiotherapy clinic to the cost per patient were they to be managed in a consultant clinic. All costs were estimated at present day prices and information was obtained from the various directorates involved. The consultant, a grade E nurse, and a receptionist staffed the consultant clinic. They were paid £140, £34, and £18 per clinic respectively. The physiotherapist alone staffed the physiotherapy specialist clinic and was paid £51 per clinic. It was estimated that 12 and six new patients were seen in each consultant and physiotherapy specialist clinic respectively. The cost of the examination suite, equipment used, and the secretarial help was the same for both clinics.

## RESULTS

Between May 1996 and May 1999, a total of 1046 appointments were made; these referrals constituted 41.6% of all new GP referrals to the paediatric orthopaedic unit. A total of 114 (9.8%) patients failed to attend the clinic. The remaining 932 patients form the basis of this study and were seen in the physiotherapy assessment clinic. Patients were aged between 1 and 16 years (mean age 7.5 years); there were 490 males and 442 females. The diagnostic break-up of cases seen in the



**Figure 1** Diagnostic break-up of cases seen in the clinic.

**Table 1** Outcome of consultations with the physiotherapist

Type of management	No (%) of patients
Reassurance and discharge*	667 (71.6)
Physiotherapy*	158 (17.0)
Surgical appliances*	43 (4.6)
Further evaluation by consultant	64 (6.9)
Total	932

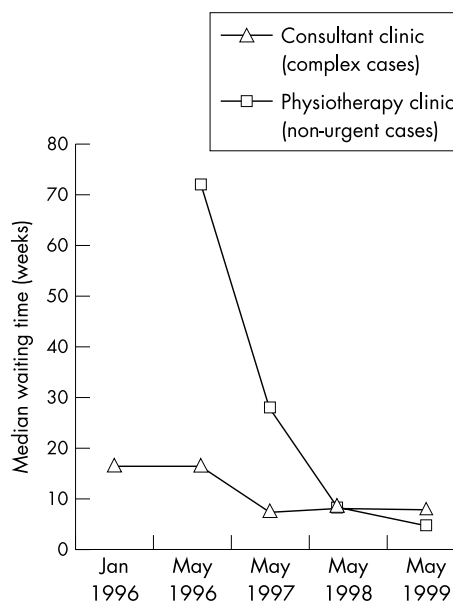
\*These were cases managed by the physiotherapist without consultant intervention.

clinic is shown in (fig 1). The outcome of consultations with the physiotherapist is shown in table 1.

In this group of 932 patients, 64 cases were later seen by the consultant paediatric orthopaedic surgeon and nine patients were listed for surgery. Of the patients seen by the consultant, the physiotherapist appropriately referred 54, four were re-referrals from the GP, and four patients were seen as they (parents) were not happy to be seen in the physiotherapy clinic. Eight patients needed further referral to other specialties (paediatric rheumatology, paediatric neurology, and general paediatric). None of the patients seen in the clinic had been re-referred by GPs with a serious problem related to the original diagnosis.

## Measures of effectiveness

- (A) *Reduction in the waiting times for non-urgent, simple orthopaedic conditions*—after the introduction of this clinic the median waiting time for non-urgent simple conditions dropped from 72 weeks in May 1996 to 28 weeks in May 1997, eight weeks in May 1998, and five weeks in May 1999 (fig 2).
- (B) *Reduction in waiting times for urgent and complex cases seen in the consultant clinic*—12 months after the introduction of this clinic the median waiting time for the consultant orthopaedic clinics dropped from 17 weeks to 7.5 weeks and was maintained at that level (fig 2).
- (C) *Patient perception of improvement and subjective satisfaction*—assessed by means of a multidimensional questionnaire survey of a random sample of 100 patients



**Figure 2** Waiting time for cases seen in the consultant and physiotherapy clinics.

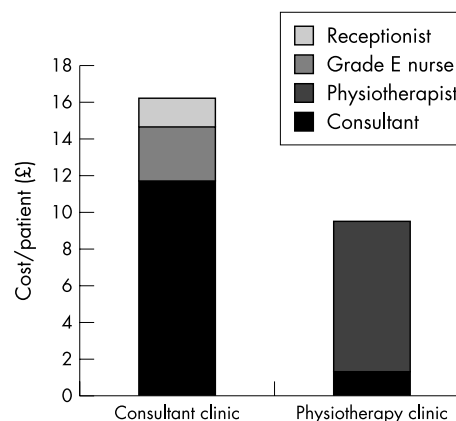
(and parents) who had been seen in the clinic. Altogether 88 patients responded to the questionnaire. More than 90% were satisfied with most of the issues but 17% of the patients felt that more facilities should be available at the clinic. Fifty percent did not expect to see a physiotherapist in the clinic but did not mind being assessed by one and most of these patients agreed that they found the clinic to be of benefit to them (fig 3).

- (D) *Re-referrals from GPs*—three patients with a recurrent episode of anterior knee pain and one with a flexible flat foot deformity were seen by the consultant and managed with appropriate non-surgical treatment.
- (E) *Cost effective analysis*—this revealed that the average cost per patient managed in the physiotherapy clinic was about £9.67 compared with £16.26 in the consultant clinic. More important was the fact that 82 consultant sessions (1046 new referrals minus 63 patients ultimately seen by the consultant) were saved over three years and this time was utilised more usefully in assessing more complex and urgent cases in the outpatient department (fig 4).

## DISCUSSION

There is an increasing demand for health services that are free at the point of use. However, the resources available in terms of money, material, and manpower are limited. The challenge is to match the demand with the available resources. The traditional way of solving this problem was to either increase the available resources or curtail the demand. This is easier said than done. Demand management is about moving from merely struggling to meet the increasing demand for health services to shaping this demand so that health needs of individuals and populations are best served with the available resources. Ways of managing demand for secondary care include condition specific waiting lists and medical assessment units.<sup>10</sup> The potential exists to develop more graduated access to health care. One important way of managing demand is to supply and clarify simple knowledge and advice.

The demand for orthopaedic outpatient appointments exceeds provision and is one of the principal causes of disenchantment with hospital services.<sup>11</sup> In a previous case-control study comparable results, but a higher level of patient satisfaction, were achieved by a physiotherapist working as a clinical assistant (in the outpatient department) than by staff grade orthopaedic surgeons.<sup>12</sup> In the present study, the

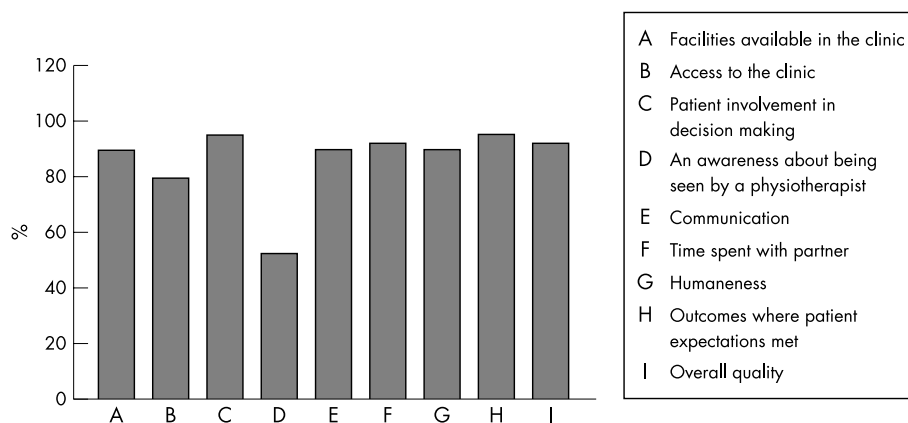


**Figure 4** Cost per patient seen in the consultant and physiotherapy clinics.

increasing demand for paediatric orthopaedic appointments was managed by:

- (A) *Increasing the provision in the paediatric orthopaedic unit*—41.6% of all GP paediatric orthopaedic referrals were seen in the physiotherapy support clinic.
- (B) *Providing graduated access to secondary health care for those patients who may not require surgical intervention*—the physiotherapist worked as a first line filter system at the interface between primary and secondary care levels.
- (C) *Organising condition specific clinics*—non-urgent, simple orthopaedic conditions being seen in the physiotherapy specialist clinic and more urgent, complex cases being seen in the consultant clinic.

As a result of the initial assessment and management by the trained physiotherapist only a small proportion (7%) of non-urgent simple orthopaedic cases, which constituted 41.6% of all GP referrals to the paediatric orthopaedic unit, eventually needed to be evaluated by the consultant. Ninety three percent of the cases seen in the physiotherapy clinic were assessed and appropriately managed by the physiotherapist without direct consultant intervention, thus making it possible for the consultant to attend to more urgent or serious cases. In addition these patients were seen much sooner than if they had been on the waiting list to see the consultant. Altogether 71.6% of patients seen were either normal or had variants of normal, which were typical of their



**Figure 3** Results of the multidimensional questionnaire survey of patient satisfaction.

developmental stage and were managed with advice and information about the "presenting problem". Seventeen percent of patients were referred to the physiotherapy department. Most of these patients had anterior knee pain and were assessed and treated with the McConnell approach.<sup>13</sup>

Since 71.6% of patients seen in the clinic were either normal or had variants of normal, we feel that educating GPs about the normal development of the musculoskeletal system in a child and devising a primary care referral protocol would reduce the demand for new paediatric orthopaedic referrals.

The failure to attend rate of about 11% (114 patients) was similar to that reported in other studies,<sup>7-9</sup> and results in considerable waste of time and resources. Non-attendance was related to resolution of symptoms or patients forgetting their appointments. All patients were given the opportunity to decline the initial appointment with the physiotherapist and hence the non-attendance was probably not attributable to patient dissatisfaction with the service.

The high percentage of patient satisfaction with the clinical care provided in the clinic has been very encouraging. None of the patients seen in the clinic has been re-referred by the GPs with a serious problem related to the original diagnosis or for more serious problems.

## CONCLUSION

As far as we are aware this is the first report of the use of a physiotherapy specialist in assessing and managing patients in a paediatric orthopaedic clinic. The physiotherapy specialist clinic has been successful in reducing the waiting times for non-urgent simple paediatric orthopaedic conditions and has increased the efficiency of the unit while maintaining the same standard of care. The success of the clinic was largely due to the close cooperation between the consultant and the physiotherapist, an agreed policy of assessment and

management of patients, and training the physiotherapist to the surgeon's work pattern. Educating GPs about the normal development of the musculoskeletal system in a child and devising a primary care referral protocol may reduce the demand for new paediatric orthopaedic referrals.

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